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Indian Standard (Reaffirmed 2004)

SHIPBUILDING — DECK MACHINERY — GLOSSARY OF TERMS AND GRAPHICAL SYMBOLS

(First Revision)

भारतीय मानक

पोत निर्माण – डैक मशीनरी – पारिभाषिक शब्दावली और ग्राफीय प्रतीक

(पहला पुनरीक्षण)

UDC 629·12·014/·015 : 001·4 + 003·62

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Marine Engineering Sectional Committee, TED 19

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards on 21 September 1989, after the draft finalized by the Marine Engineering Sectional Committee had been approved by the Transport Engineering Division Council.

This standard was first published in 1977. This revision up-dates the terms defined in the earlier standard and also incorporates some additional terms to bring them in line with international practice.

In the preparation of this standard care has been taken to standardize only suitable terms and definitions and not to perpetuate unsuitable terms because of their use in the past. The illustrations given against the respective terms are purely diagrammatic and have been developed to provide for any series of combinations of symbols to represent the respective types of deck machinery. For winches, the symbols indicating variations in powering arrangements are shown in **2.16**.

The preferred terms are given in bold type and non-preferred terms, though frequently used in marine field, are given in ordinary type. The use of deprecated terms shown with an asterisk (*) should be avoided, as far as possible.

Deck-machinery is a very wide term and terms pertaining to specific fields, such as cargo handling, anchoring, mooring and towing, are also defined in the standard. For the sake of convenience in reference, the standard is being published in the following five parts (each part covering specific terms associated with a particular area of use).

IS 8650 Ship building — Deck machinery — Glossary of terms and graphical symbols:

Part 1 Deck machinery
Part 2 Anchoring and mooring
Part 3 Cargo handling
Part 4 Towing
Part 5 Ancillary deck equipment

This standard is based on ISO 3828 — 1984 'Shipbuilding and marine structures — Deck machinery — Vocabulary', issued by the International Organization for Standardization (ISO).

Indian Standard

SHIPBUILDING — DECK MACHINERY — GLOSSARY OF TERMS AND GRAPHICAL SYMBOLS

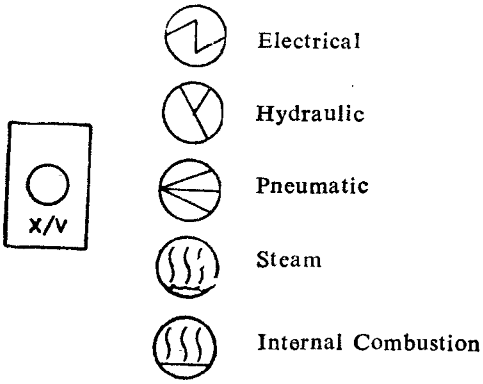
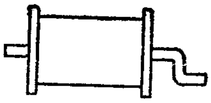
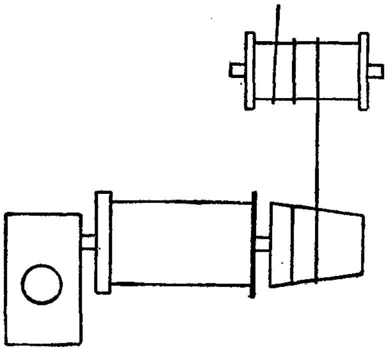
PART 1 DECK MACHINERY

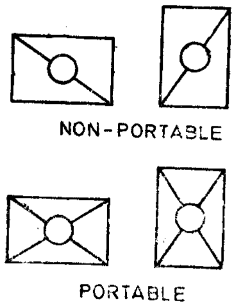
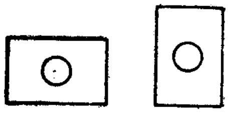
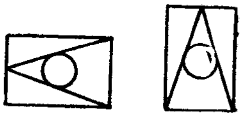
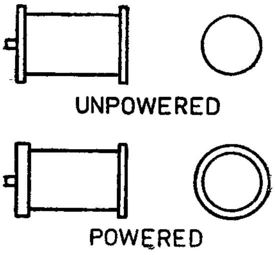
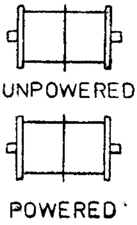
(First Revision)

1 SCOPE

1.1 This standard (Part 1) defines general terms and their graphical representation, where applicable, in use relative to ships' deck machinery.

2 TERMINOLOGY

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.1	**Prime mover**	An electric or hydraulic motor, steam engine or similar drive, acting directly on the deck machinery. NOTE — In a diesel-electric drive, the electric motor is the prime mover.	 X/V Electrical Hydraulic Pneumatic Steam Internal Combustion X=Number of discrete speeds (1, 2, 3, etc) V=Infinitely variable speed
2.2	**Unpowered**	Without any means of powering, except for hand power.	
2.3	**Externally powered**	Activated by means other than a directly connected prime mover.	

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.4	**Lightly powered**	A prime mover which is suitable only for operating the deck machinery in a lightly loaded condition, for example, reeling in of an untensioned rope, or topping an unloaded derrick.	
2.5	**Fully powered**	A prime mover which is suitable for operating the deck machinery at its full designed load.	
2.6	**Non-automatic**	Controlled solely by hand.	—
2.7	**Remote control**	Controlled from a position not integral with the machine. This may be achieved by a radio-electric, electric, hydraulic, pneumatic or other link.	—
2.8	**Automatic**	Controlled without direct human intervention.	
2.9	**Drum** Barrel* Coiling drum* Rope drum* Rope barrel*	A cylinder normally flanged at both ends. When used, the rope is fixed and stored on it.	
2.10	**Split drum**	A drum normally split by a flange somewhere along its length. The flange may or may not have a slot.	

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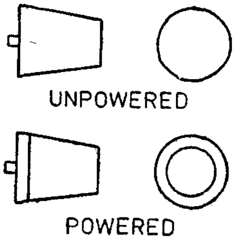
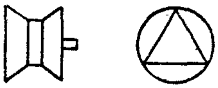
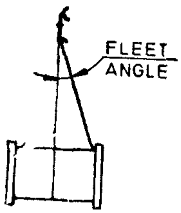
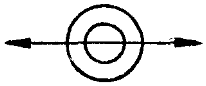
*Deprecated term.

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.11	**Warping end** Warping head* Warping drum* Drum head*	A part similar to a drum but longitudinally concave shaped and fixed to the shaft end for hauling but not storing a rope.	
2.12	**Fibre rope handling gear** First line ashore equipment*	A power-operated device with one or two drums to ensure that the working part of the fibre rope is reeled in no more than one layer. It may be used in conjunction with a rope storage reel.	—
2.13	**Cable lifter** Gypsy* Wild cat* Cable holder*	A deeply grooved drum, shaped to engage the links of a chain cable.	
2.14	**Fleet angle**	The maximum angle subtended by a rope to a line drawn at right angles to the axis of the winch drum or warping end, through the point at which the rope leaves the drum or warping end.	
2.15	**Spooling gear**	A synchronized device to assist uniform layering of the rope on the drum.	

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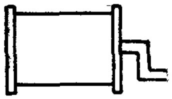
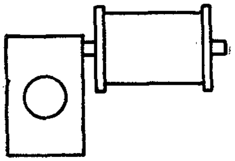
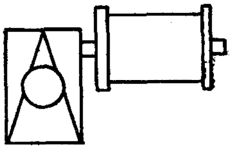
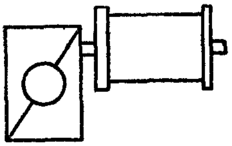
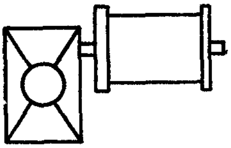
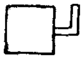
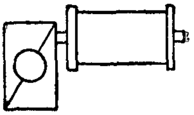
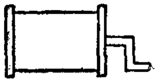
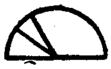
*Deprecated term.

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.16	**Winch**	A powered, or unpowered machine, having one or more horizontally mounted drums and/or one or two warping ends, on which a rope may be wound under tension.	 UNPOWERED  FULLY POWERED  FULLY POWERED AUTOMATIC  LIGHTLY POWERED NON-PORTABLE  LIGHTLY POWERED PORTABLE
2.17	**Controller**	A unit fitted with control levers, buttons, etc, as appropriate.	
2.18	**Rope storage reel**	A lightly powered or unpowered drum intended solely for rope storage.	 LIGHTLY POWERED  UNPOWERED

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.19	**Rope stopper**	A means of holding a rope under tension while transferring the rope from or to the hauling machinery, from or to a position where it may be permanently secured.	—
2.20	**Cable stopper** Chain compressor*	A device secured to the ships' structure separate from the cable lifter, for the purpose of securing a chain cable.	
2.21	**Recovery load**	The maximum rope tension (in kilonewtons) measured at the drum exit when the drum commences to rotate in the direction of haul, the prime mover being set for maximum torque under automatic control and the rope being wound on the drum in a single layer.	—
2.22	**Rendering load**	The maximum rope tension (in kilonewtons) measured at the drum exit when the drum just commences to rotate in the opposite direction to the applied hauling torque, the prime mover being set for maximum torque in automatic control, with the rope wound on the drum in a single layer.	—
2.23	**Drum load** Rated load* Hauling load* Hoisting load*	The maximum rope tension (in kilonewtons) measured at the drum exit when the winch is hoisting or hauling in at the nominal speed with the rope round on the drum in a single layer.	—
2.24	**Holding load** Brake holding load*	The maximum tension (in kilonewtons) that can be maintatned by a braking/locking system in the first layer.	—
2.25	**Stalling load**	The maximum rope tension (in kilonewtons), measured at the drum exit when the drum ceases to rotate in the direction of haul, the prime mover being set for maximum torque and the rope being wound on the drum in a single layer.	—

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*Deprecated term.

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.26	**Nominal speed** Design speed* Rated speed*	The maximum speed (in metres per second), that can be maintained by the winch when it is applying the drum load.	—
2.27	**Light line speed** No load speed* Slack rope speed	The maximum rope speed (in metres per second) that the winch can maintain with the rope wound on the drum in a single layer, and with negligible tension on the rope, normally not more than 10 percent of the drum load.	—
2.28	**Creep speed**	The minimum uniform speed (in metres per second) measured on the first layer that the winch can maintain under drum load.	—
2.29	**Prototype test**	A test applied to the first machine of a new design.	—
2.30	**Type test**	A test applied to one of a batch of machines of identical design from one manufacturer.	—
2.31	**Individual test**	A test applied to each machine produced by a manufacturer.	—
2.32	**Hawser**	Man-made, natural fibre or wire rope used for mooring, warping or towing.	—
2.33	**Trawl winch**	A winch having one or more drums which may operate independently or simultaneously to hold, haul in or veer out the trawl ropes. It may have monitoring safety devices and spooling gear to protect ropes, net and gear. Auxiliary drums and warping ends may be fitted.	—
2.34	**Torque**	A powered hinge.	—

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*Deprecated term.

Indian Standard

SHIPBUILDING — DECK MACHINERY — GLOSSARY OF TERMS AND GRAPHICAL SYMBOLS

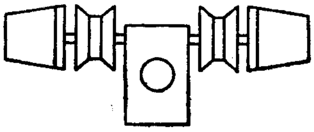
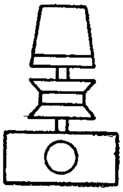
PART 2 ANCHORING AND MOORING

(First Revision)

1 SCOPE

1.1 This standard (Part 2) defines specific terms associated with anchoring and mooring and their diagrammatic representation, where applicable.

2 TERMINOLOGY

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.1	**Windlass** Anchor windlass*	A machine designed to drop and hoist the anchor. It has one or more cable lifters mounted on a horizontal shaft, each being fitted with a brake. The cable lifters are capable of being declutched from the prime mover. One or two warping ends may also be fitted (*see* **2.6** of Part 1). NOTE — Prime mover machinery is above deck.	
2.2	**Anchor capstan**	A power driven cable lifter mounted on a vertical shaft. The shaft may be extended beyond the cable lifter to carry a warping end. The cable lifter is declutchable from the prime mover, and in operation and use is similar to the windlass. NOTE — Prime mover machinery is below deck.	

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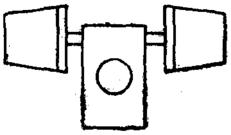
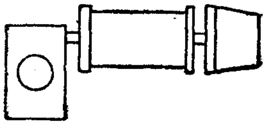
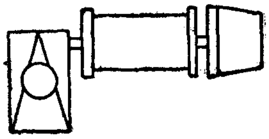
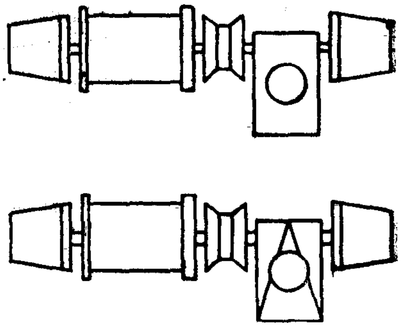
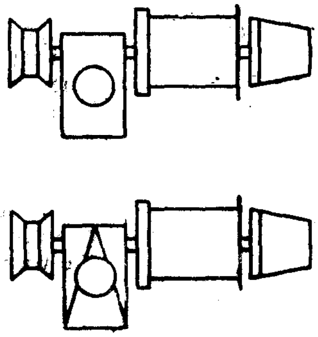
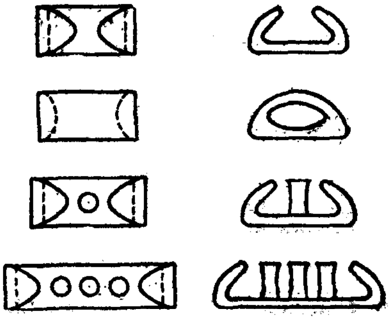
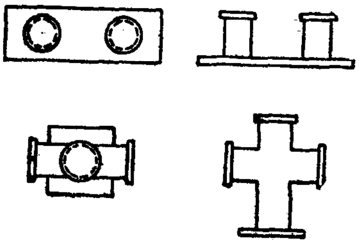
*Deprecated term.

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.3	**Warping winch**	A winch used solely for warping, on which a rope may be wound under power but not stored.	
2.4	**Mooring winch**	A winch with the ability to hold and haul a tensioned mooring rope and having a capacity for rope storage, controlled solely by hand.	
2.5	**Automatic mooring winch**	A mooring winch with the additional ability to haul or render a mooring rope within selectable limits without direct human intervention.	
2.6	**Combined windlass/ mooring winch**	A machine with a common prime mover which will provide independently the functions of either a windlass or a mooring winch (automatic or non-automatic).	 Cable Lifter as Integral Part of the Mechanism  Cable Lifter Attached to the winch

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.7	**Fairlead**	A guide to change the direction of a rope without causing damage to it.	
2.8	**Bollard**	A static structure comprising one or two bitts (that is, posts), firmly secured to the deck and used for belaying, fastening and working ropes.	
2.9	**Veer**	To 'pay out' a rope under power.	—
2.10	**Messenger rope**	A rope that is secured to a larger rope to enable it to be hauled in (*see also* **2.16** of Part 3).	—
2.11	**Hawse pipe**	A tube passing from the deck to the shell of the ship, through which the chain cable passes.	—
2.12	**Spurling pipe** Chain pipe* Navel pipe*	A tube passing from the deck to the chain locker through which the chain cable passes.	—
2.13	**Chain locker**	Compartment for storage of the chain cable.	—
2.14	**Anchor housed**	Anchors hauled tight in the ship's structure.	—
2.15	**Anchor stopper**	A device for holding the anchor tight in its housed position.	—
2.16	**Anchor secured**	Anchor housed and stoppered off.	—

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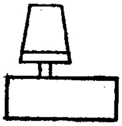
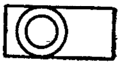
*Deprecated term.

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.17	**Rule length**	The minimum total length of the chain cable for the two bower anchors, according to the rules of the Classification Societies.	—
2.18	**Shackle of chain cable** Shot of chain cable* Length of chain cable*	27·5 m length of chain cable.	—
2.19	**Capstan** Warping capstan* Mooring capstan*	A machine having a vertically mounted warping end on which a rope may be wound under power, but not stored.	 

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*Deprecated term.

Indian Standard

SHIPBUILDING — DECK MACHINERY — GLOSSARY OF TERMS AND GRAPHICAL SYMBOLS

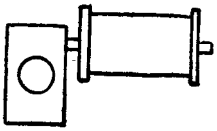
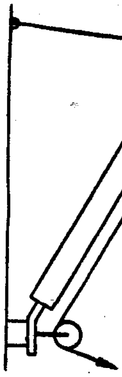
PART 3 CARGO HANDLING

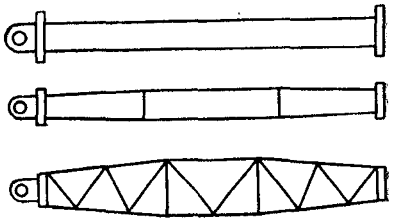
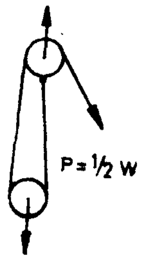
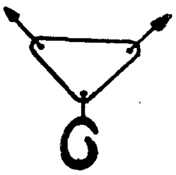
(First Revision)

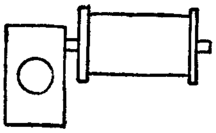
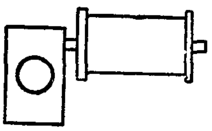
1 SCOPE

1.1 This standard (Part 3) defines specific terms associated with cargo handling and their diagrammatic representation where applicable.

2 TERMINOLOGY

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.1	**Cargo winch**	A winch used for hoisting and lowering cargo.	
2.2	**Derrick**	A device for hoisting and lowering loads, having a boom pivoted at its heel, the head of which may be swung (within the limits imposed by the heel pivot and/or the operating machinery) in a horizontal and vertical plane. The boom may be slewed into any position by means of guys as desired. The operating machinery is fixed to the ships structure and is independent of the boom.	
2.3	**Swinging derrick**	A rig in which only one derrick is used so that the suspended load is transferred from one point to another by swinging the boom.	—
2.4	**Heavy lift derrick**	A derrick with a boom which may be slewed under load, the tackle of which permits heavy lifts (of atleast 12·5 t).	—

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.5	**Boom**	In the context of ships' cargo handling machinery, a boom is the swinging part of a derrick having a pivot at its heel, and may be of tubular, lattice or other section.	
2.6	**Purchase tackle**	A hauling and hoisting system using rope or chain associated with two or more sheaves, so arranged as to give machanical advantage.	
2.7	**Union purchase**	A rig in which a pair of derricks is used in combination, the derricks being fixed and the cargo runners coupled in such a way that the load may be swung from a position vertically under one derrick to a position vertically under the second.	
2.8	**Cargo runner**	The rope by which the load is suspended and which passes over a sheave at the head of the derrick boom and thence to the cargo winch.	—
2.9	**Derrick crane**	A derrick which includes only one of the following modifications: a) The cargo winch is built into the boom or boom heel support structure and moves with the boom when it is slewed or topped or both;	

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
		b) The span winch is built into the boom or boom support structure and moves with the boom when the boom is slewed;	—
		c) The boom is slewed by means of twin span tackles so designed that no slewing guys are required;	—
		d) The slewing of the boom is achieved by applying a torque to the boom heel or the boom heel support structure; and	—
		e) Hydraulic or other mean of topping (luffing) the boom is fitted in such a manner that it acts at a point on the boom more than 10 percent of the boom length from the derrick's head cargo block eyeplate.	—
		Where two or more of the above modifications occur simultaneously, the device is a crane.	—
2.10	**Jib crane;** **Fixed crane**	A crane with a jib which may be rotated by turning gear and adjusted in the vertical plane.	—
2.11	**Slewing winch** **Guy winch***	A winch having a rope storage capacity and used for slewing and retaining a boom.	
2.12	**Span winch** **Topping winch***	A winch having a rope storage capacity and used for topping, lowering and supporting a boom under load and no load.	

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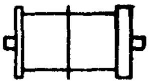
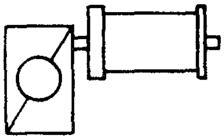
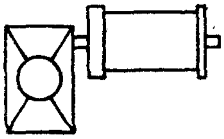
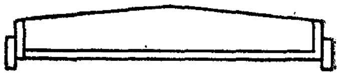
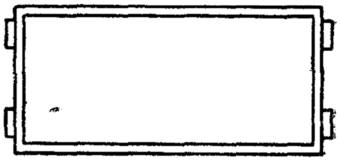
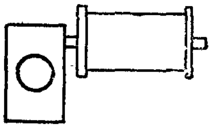
*Deprecated term.

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.13	**Topping winch**	A winch, frequently unpowered, having rope storage capacity and used for topping and lowering a derrick boom while the boom is unloaded and for supporting it whilst it is supporting a load.	  
2.14	**Hatch cover**	The closing appliance for the hatch to the cargo space. Mechanically operated covers are generally integral with the ships' structure as opposed to being lifted clear. This may be achieved by rolling, folding or hinging on the hatch coaming or associated track or by a combination of these methods.	 
2.15	**Hatch cover winch**	A winch designed specifically for opening or closing hatch covers.	
2.16	**Messenger rope**	A rope used for transferring torque from a powered winch to an externally powered winch; for example, an externally powered topping winch (*see also* **2.10** of Part 2).	—
2.17	**Span tackle**	Tackles for hoisting, lowering and holding a loaded and unloaded boom; the rope forming part of a span tackle is a span rope.	—

Indian Standard

SHIPBUILDING — DECK MACHINERY — GLOSSARY OF TERMS AND GRAPHICAL SYMBOLS

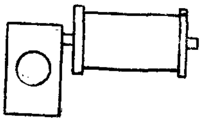
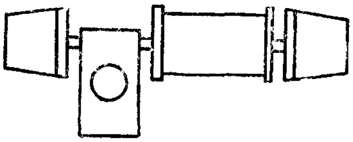
PART 4 TOWING

(First Revision)

1 SCOPE

1.1 This standard (Part 4) defines specific terms associated with towing and their diagrammatic representation, where applicable.

2 TERMINOLOGY

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.1	**Towing winch**	A winch with one or more rope storage drums for veering out, hauling-in or making fast tow ropes.	
2.2	**Towing bridle winch**	A winch having a rope storage drums with or without warping end for manipulation of the rope bridle.	
2.3	**Towing hook**	A hook specially designed for the attachment of a tow rope. It may be fitted with a quick release mechanism.	—
2.4	**Bridle**	A rope attached to the tug to restrain and control the tow rope.	—

Indian Standard

SHIPBUILDING – DECK MACHINERY – GLOSSARY OF TERMS AND GRAPHICAL SYMBOLS

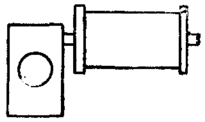
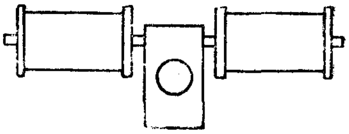
PART 5 ANCILLARY DECK EQUIPMENT

(First Revision)

1 SCOPE

1.1 This standard (Part 5) defines specific terms associated with ancillary deck equipment and their diagrammatic representation, where applicable.

2 TERMINOLOGY

No.	Terms	Definition	Graphical Symbols and Typical Illustrations
2.1	**Accommodation ladder**	An adjustable ladder, outboard of the ship, attached to a hinged platform or turn-table and supported at the foot from a davit or similar device.	—
		The ladder is arranged to terminate near the water to give access to or from a boat.	—
		Accommodation ladders may be arranged for use as a shore gangway.	—
2.2	**Accommodation ladder winch**	A winch designed specifically for lowering, retaining and hoisting an accommodation ladder, and having a rope storage drum.	
2.3	**Boat falls**	The ropes by which ships' boats are lowered and hoisted from the davits.	—
2.4	**Boat winch**	A winch designed specifically for handling the boat falls.	

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